

LIST OF THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1. (Currently Amended) A collection of particles comprising aluminum oxide, the collection of particles having an average diameter of primary particles from about 5 nm to about 500 nm and less than about one in 10^6 particles have a diameter greater than about three times the average diameter of the collection of particles, wherein the aluminum oxide has a crystalline structure of γ -Al₂O₃.
2. (Original) The collection of particles of claim 1 wherein the collection of particles have an average diameter from about 5 nm to about 25 nm.
3. (Canceled)
4. (Canceled)
5. (Previously Presented) The collection of particles of claim 1 wherein the collection of particles includes less than about one in 10^6 particles with a diameter greater than about two times the average diameter.

6. (Original) The collection of particles of claim 1 wherein the collection of particles have a distribution of particle sizes such that at least about 95 percent of the particles have a diameter greater than about 40 percent of the average diameter and less than about 160 percent of the average diameter.
7. (Original) The collection of particles of claim 1 wherein the collection of particles have a distribution of particle sizes such that at least about 95 percent of the particles have a diameter greater than about 60 percent of the average diameter and less than about 140 percent of the average diameter.
8. (Original) The collection of particles of claim 1 wherein the collection of particles have a distribution of particle sizes such that at least about 99 percent of the particles have a diameter greater than about 40 percent of the average diameter and less than about 160 percent of the average diameter.
9. (Canceled)
10. (Canceled)
11. (Previously Presented) A polishing composition comprising the particle collection of claim 1 wherein the polishing composition comprises from about 0.05 percent by weight to about 15 percent by weight aluminum oxide particles.

12. (Previously Presented) The polishing composition of claim 11 wherein the polishing composition comprises from about 1.0 percent by weight to about 10 percent by weight aluminum oxide particles.

13. (Currently Amended) The polishing composition of claim 11 wherein the dispersion polishing composition is an aqueous dispersion.

14. (Currently Amended) The polishing composition of claim 11 wherein the dispersion polishing composition is a nonaqueous dispersion.

15. (Previously Presented) The polishing composition of claim 11 further comprising abrasive particles comprising silicon carbide, metal oxides other than aluminum oxide, metal sulfides or metal carbides.

16. (Previously Presented) The polishing composition of claim 11 further comprising colloidal silica.

17. (Currently Amended) A method for producing a collection of aluminum oxide particles having an average diameter from about 5 nm to about 500 nm, the method comprising:
flowing a molecular stream through a reaction chamber, the molecular stream comprising an aluminum precursor that does not spontaneously react with O₂, an oxidizing agent comprising O₂, and an infra red absorber; and
pyrolyzing the flowing molecular stream in a reaction chamber, where the pyrolysis is driven by heat absorbed from a continuous wave laser beam.

18. (Previously Presented) The method of claim 17 wherein the aluminum oxide particles have an average diameter from about 5 nm to about 100 nm.

19. (Currently Amended) A collection of particles comprising aluminum oxide, the collection of particles having an average diameter from about 5 nm to about 500 nm and a distribution of particle sizes such that at least about 95 percent of the particles have a diameter greater than about 40 percent of the average diameter and less than about 160 percent of the average diameter, wherein the aluminum oxide has a crystalline structure of γ -Al₂O₃.

20. (Canceled)

21. (Previously Presented) The collection of particles of claim 19 wherein the collection of particles have a distribution of particle sizes such that at least about 99 percent of the particles have a diameter greater than about 40 percent of the average diameter and less than about 160 percent of the average diameter.

22. (Previously Presented) The collection of particles of claim 19 wherein the collection of particles have a distribution of particle sizes such that at least about 95 percent of the particles have a diameter greater than about 60 percent of the average diameter and less than about 140 percent of the average diameter.